CONTENTS/SOMMAIRE

FEBRUARY/FÉVRIER

Editorial Policy/Orientation de la Revue iii

Instructions to authors v

Recommandations aux auteurs vi

ARTICLES

P. Wisner, R. Townsend, J. Sabourin, and D. Leitch Joint use of the HEC-2 model and a physical model for floodline delineation upstream of a bridge 1

Andres Tork Rehabilitation of prestressed concrete box beam deck of an elevated expressway 8

M. Sayed and R. M. W. Frederking Measurements of ridge sails in the Beaufort Sea 16

T. J. Zhu, W. K. Tso, and A. C. Heidebrecht Evaluation of base shear provisions in the 1985 edition of the National Building Code of Canada 22

B. MacKay, D. Schmidt, and T. Rezansoff Effectiveness of concrete confinement on lap splice performance in concrete beams under reversed inelastic loading 36

O. A. Pekau and V. Cistera Behaviour of nonlinear coupled shear walls with flexible bases 45

Radu Zmeureanu and Paul Fazio Role of computers in the design of energy-responsive buildings 55

T. D. Prowse and P. Marsh Thermal budget of river ice covers during breakup 62

Brahim Benmokrane et Gérard Ballivy Pertes des charge des ancrages actifs injectés dans un massif rocheux 72

NOTES

Bryan Stafford Smith and Mark Cruvellier Two-dimensional modelling for the analysis of symmetrical structures that twist 82

H. Marzouk Structural response to rod mill vibration 85

DISCUSSIONS

Erol Karacabeyli and Ricardo O. Foschi Glulam rivet connections under eccentric loading

Discussion by Ian Smith and Luke Whale 90

Authors' reply 91

J. C. Jofriet, R. Green, and T. I. Campbell Design recommendations for reinforced concrete cylindrical storage structures for aqueous materials

Discussion by Eleanor M. Elliott 92

Authors' reply 94

J. H. Rainer Force reduction factors for the seismic provisions of the National Building Code of Canada

Discussion by R. H. Ferahian 95

Author's reply 96

Ricardo O. Foschi and Ashwani Gupta Reliability of floors under impact vibration

Discussion by Ying H. Chui and Ian Smith 97

Authors' reply 98

BOOK REVIEWS/CRITIQUES DE LIVRES

J. A. McCorquodale Developments in hydraulic engineering — 4. *Edited by* P. Novak 100

T. Tharmabala Structural assessment — the use of full scale and large scale testing. *Edited by* F. K. Garas, J. L. Clarke, and G. S. T. Armer 101

ERRATA

J. H. Rainer Erratum: Force reduction factors for the seismic provisions of the National Building Code of Canada 102

S. A. Mirza and J. G. MacGregor Erratum: Limit states design of concrete slender columns 102

S. Beltaos and V. K. Arora An explicit algorithm to simulate transient transverse mixing in rivers 103

APRIL/AVRIL

ARTICLES

B. G. Hutchinson and D. J. Parker Parametric analyses of large truck braking efficiencies 105

B. G. Hutchinson, L. R. Rilett, R. Green, and R. C. G. Haas Axle load shifts during truck braking and their implications for bridge and pavement design 113

Lucie Wilson, Denis Isabel et Jean-Pierre Villeneuve Effet de la propagation non linéaire des débits sur le contrôle en temps réel des débordements de réseaux unitaires 119

Robert G. Driver and D. J. Laurie Kennedy Combined flexure and torsion of I-shaped steel beams 124

V. M. Malhotra Mechanical properties and freezing and thawing durability of concrete incorporating a ground granulated blast-furnace slag 140

T. Viraraghavan and A. Ayyaswami Batch studies on septic tank effluent treatment using peat 157

A. S. J. Swamidas, P. S. Cheema, and D. B. Muggeridge Fatigue strength of fillet-welded cruciform joints 162

G. Gendron, D. Beaulieu, and G. Dhatt Finite element modeling of bolted connections 172

Michael Isaacson and Qi-Hua Zuo Nonlinear wave forces on a circular cylinder 182

C. E. Wilson and Sukhi Cheema Water and sewer service connections in permafrost areas of the Northwest Territories 188

NOTES

Denis Isabel, Lucie Wilson et Jean-Pierre Villeneuve Modèles débit–qualité dans un réseau unitaire en période de pluie 197

L. L. Ratnayake Intercity auto trip estimation for Sri Lanka using entropy maximization 200

DISCUSSIONS

Ian Smith and Yin Hei Chui Design of lightweight wooden floors to avoid human discomfort

Discussion by D. E. Allen and J. H. Rainer 202

Authors' reply 202

Baidar Bakht and Leslie G. Jaeger Dealing with varying moments of inertia of girders in bridge analysis

Discussion by Tomasz T. Pietraszek 203

Authors' reply 205

James A. Kells and C. D. Smith Head recovery at submerged abrupt conduit outlets

Discussion by Alan F. Babb 206

Authors' reply 206

BOOK REVIEWS/CRITIQUES DE LIVRES

Michael Isaacson BASIC fluid mechanics. *By* J. J. Sharp 208

Anthony Kruysse Innovation and the rise of the tunnelling industry. *By* Graham West 208

A. Ghali and S. Sirosh Finite element analysis of thin-walled structures. *Edited by* J. W. Bull 210

JUNE/JUIN

ARTICLES

A. Filiatrault and S. Cherry Efficient numerical modelling for the design of friction damped braced steel plane frames 211

Saâd Bennis et Paul-Édouard Brunelle Modèles d'évolution du manteau nival et de la fonte des neiges 219

Bruno Massicotte, Denis Beaulieu and André Picard Ultimate strength of columns laterally braced by girt–diaphragm systems 227

André Picard and Denis Beaulieu Theoretical study of the buckling strength of compression members connected to coplanar tension members 239

André Picard and Denis Beaulieu Experimental study of the buckling strength of compression members connected to coplanar tension members 249

J. M. Byrne, E. A. McBean, K. B. Shipley, and G. J. Farquhar A statistical long-range transport model for simulation of wet sulphate deposition 258

M. J. Newark, L. E. Welsh, R. J. Morris, and W. V. Dnes Revised ground snow loads for the 1990 National Building Code of Canada 267

N. Kouwen and G. Garland Resolution considerations in using radar rainfall data for flood forecasting 279

Ah Book Ng, M. Saeed Mirza, and T. T. Lie Fire endurance analysis of reinforced concrete columns 290

Tharmalingham Tharmabala Nonlinear analysis of grid systems 300

C. A. Town, D. S. Mavinic, and B. Moore A study of water quality in an urban river and potential improvement using a prototype instream aerator 308

G. J. Farquhar Leachate: production and characterization 317

M. Van Aerde, J. Shortreed, A. M. Stewart, and M. Matthews Assessing the risks associated with the transport of dangerous goods by truck and rail using the RISKMOD model 326

Ghyslaine McClure et René Tinawi Comportement dynamique des lignes aériennes de transport d'électricité dû aux bris de câbles. I. Modélisation mathématique 335

Ghyslaine McClure et René Tinawi Comportement dynamique des lignes aériennes de transport d'électricité dû aux bris de câbles. II. Problèmes numérique associés à la modélisation mathématique 354

N. Rajaratnam, C. Katopodis, and N. McQuitty Hydraulics of culvert fishways II: slotted-weir culvert fishways 375

Darrel P. Gagnon and D. J. Laurie Kennedy Behaviour and ultimate tensile strength of partial joint penetration groove welds 384

D. Couillard, F. D'Amours et G. Patry Étude comparative de trois modèles dynamiques de boues activées 400

DISCUSSIONS

John Christian and Havindra Caldera Earthmoving cost optimization by operational research

Discussion by Said M. Easa 408

Authors' reply 409

BOOK REVIEWS/CRITIQUES DE LIVRES

Georges Akhras Expert systems in construction and structural engineering. *Edited by* H. Adeli 410

A. P. S. Selvadurai Elasticity in engineering mechanics. *By* A. P. Boresi and K. P. Chong 411

R. A. Dorton Cable-stayed bridges — theory and design. *By* M. S. Troitsky 412

André Picard Joint flexibility in steel frames. *Edited by* W. F. Chen 413

Pierre Labossière and Narendra K. Srivastava Space structures for sports buildings. *Edited by* Tien T. Lan and Yuan Zhilian 414

AUGUST/AOÛT

ARTICLES

Jude O. Igwemezie, M. Saeed Mirza, and J. F. Scott Field test of an open deck railway bridge with concrete ties 417

Shantaram G. Ekhande and George Abdel-Sayed Application of compound finite strip method in soil–steel structures 426

S. C. H. Cheung Methods to measure apparent diffusion coefficients in compacted bentonite clays and data interpretation 434

J. C. Tait, P. J. Hayward, and J. S. Devgun Technologies for the containment, immobilization, and disposal of radioactive wastes 444

J. A. Sato, F. J. Vecchio, and H. M. Andre Scale-model testing of reinforced concrete under impact loading conditions 459

Najat Serhir-Taleb et Claude Marche Une analyse numérique des possibilités de résonance d'un bassin portuaire de profondeur variable 467

Kim D. Barlishen, Slobodan P. Simonovic, and Donald H. Burn A simulation–optimization algorithm for reservoir capacity calculation: the effect of inflow data set length 477

Said M. Easa Simplifying roadway cross sections without reducing volume accuracy 483

Peter C. Nettleton and John A. McCorquodale Radial flow stilling basins with baffle blocks 489

T. T. Vandergraaf High-level nuclear waste management: a geochemical perspective 498

Pierre Dumonteil In-plane buckling of trusses 504

T. Stathopoulos and M. H. Tan A computer program for the evaluation of wind-induced forces and vibrations of buildings 519

D. Surry and E. M. F. Stopar Wind loading of large low buildings 526

Michael Isaacson and John Baldwin Wave–current effects on large offshore structures 543

Peter A. L. Richards and Christopher D. Thompson Permeability protocol for the compacted clay liner at Metropolitan Toronto's Keele Valley Landfill 552

J. S. Devgun Suitability of unconsolidated sediments for hosting low-level radioactive waste disposal facilities 560

Rowena Ridout and Eric J. Miller A disaggregate logit model of intercity common carrier passenger modal choice 568

B. deV. Batchelor and Jayanth Srinivasan Calculation of stress in prestressing steel at ultimate conditions 576

Gregory S. Miazga and D. J. Laurie Kennedy Behaviour of fillet welds as a function of the angle of loading 583

DISCUSSIONS

Merv Palmer Bacterial loadings from resuspended sediments in recreational beaches

Discussion by Gordon R. Finch 600

Author's reply 602

A. Martin, S. F. Stiemer, and P. Osterrieder Ultimate load capacity of square shear plates with circular perforations

Discussion by Cedric Marsh 603

Authors' reply 603

BOOK REVIEW/CRITIQUE DE LIVRE

Tak F. Wong Bridge analysis by microcomputer. *By* Leslie G. Jaeger and Baidar Bakht 605

OCTOBER/OCTOBRE

ARTICLES

Mark A. Bradford Buckling of longitudinally stiffened plates in bending and compression 607

M. D. Haug, D. J. L. Forgie, and S. L. Barbour Design of a hydrodynamic leachate containment system 615

Patrick Paultre, Daniel Castele, Suzanne Rattray, and Denis Mitchell Seismic response of reinforced concrete frame subassemblages — a Canadian code perspective 627

Denis Couillard Élimination des boues résiduaires urbaines par la fertilisation sylvicole 650

Pierre Laplante et Pierre-Claude Aïtcin L'utilisation des bétons à très haute résistance au Canada 661

G. G. Patry, A. Kennedy, and S. Potter Runoff modelling under noise-corrupted rainfall conditions 669

Osama Moselhi and Stanley Hason Robotics in construction: implementation and economic evaluation 678

David H. Manz, Robert E. Loov, and Jim Webber Brooks Aqueduct 684

B. G. Hutchinson Pavement damage implications of Ontario Bridge Formula axle group weight limits 693

S. Ho, M. S. Cheung, S. F. Ng, and Tonghua Yu Longitudinal girder moments in simply supported bridges by the finite strip method 698

H. O. Schroeter and W. E. Watt Practical simulation of sediment transport in urban runoff 704

B. S. Jayas and M. U. Hosain Behaviour of headed studs in composite beams: full-size tests 712

Mohammed H. Magued, Michel Bruneau, and Robert B. Dryburgh Evolution of design standards and recorded failures of guyed towers in Canada 725

Michel Bruneau, Mohammed H. Magued, and Robert B. Dryburgh Recommended guidelines for upgrading existing towers 733

S. Troxler, D. W. Smith, and E. Knettig Powdered activated carbon selection for water treatment 743

A. Filiatrault and S. Cherry Parameters influencing the design of friction damped structures 753

Kaz Adamowski and J. Muir A Kalman filter modelling of space-time rainfall using radar and rainguage observations 767

NOTE

N. Rajaratnam, C. Katopodis, and A. Mainali Pool-orifice and pool-orifice-weir fishways 774

DISCUSSIONS

Shaden T. Abdel-Gawad and Jatinder K. Bewtra Decay of chlorine in diluted municipal effluents

Discussion by D. S. Graham 778

Authors' reply 779

Patrice M. Pelletier Uncertainties in the single determination of river discharge: a literature review

Discussion by Kenneth L. Wahl and Wilbert O. Thomas, Jr. 779

Author's reply 780

BOOK REVIEWS/CRITIQUES DE LIVRES

Denis Beaulieu Composite steel structures — advances, design and construction. *Edited by* R. Narayanan 782

Denis Beaulieu Steel structures — advances, design and construction. *Edited by* R. Narayanan 782

F. F. Saccomanno Road accident statistics. *By* T. P. Hutchinson 784

Glenn Morris Connections in steel structures: behaviour, strength and design. *Edited by* Reidar Bjorhovde, Jacques Brozzetti, and Andre Colson 785

S. R. Markovic Concrete bridges engineering: performance and advances. *Edited by* R. J. Cope 786

DECEMBER/DECEMBRE

ARTICLES

D. K. McNeely, G. C. Archer, and K. N. Smith Structural analysis of old stone arch bridges 789

Richard Zytner, Nihar Biswas, and Jatinder K. Bewtra Adsorption and desorption of perchloroethylene in soils, peat moss, and granular activated carbon 798

Walter H. Dilger and Marwan Shatila Shear strength of prestressed concrete edge slab–column connections with and without shear stud reinforcement 807

Sylvie Letendre, Raymond Desjardins, Line Fortin, Pierre Lafranche et François G. Brière Influence de la température sur le rendement des filtres au charbon activé biologique 820

A. Soulaïmani, Y. Ouellet, G. Dhatt et R. Blanchet Modélisation tridimensionnelle de l'écoulement au voisinage d'un aménagement portuaire **829**

A. G. Razaqpur, Mostafa Nofal, and M. S. Mirza Nonlinear analysis of prestressed concrete box girder bridges under flexure **845**

J. L. Dawe and C. K. Seah Out-of-plane resistance of concrete masonry infilled panels **854**

J. L. Dawe and C. K. Seah Behaviour of masonry infilled steel frames **865**

J. L. Dawe, A. B. Schriver, and C. Sofocleous Masonry infilled steel frames subjected to dynamic load **877**

R. D. Scott, D. J. Turcke, and W. F. Baird A device for measuring forces in a rubble-mound breakwater **886**

Abul K. Azad, Mohammed H. Baluch, and Aejaz Ali Analysis of continuous curved girder-slab bridges **895**

Shahbaz Mavaddat and M. Saeed Mirza Computer analysis of thin-walled concrete box beams **902**

T. Stathopoulos and M. Dumitrescu-Brulotte Design recommendations for wind loading on buildings of intermediate height **910**

Gerald Brown and Siovache Kahkeshan Estimating a mode choice model with incomplete data **917**

Yvon Ouellet, François Anctil, and Louis Desjardins Solving a harbor accretion problem: the case of Millerand, Îles-de-la-Madeleine, Quebec **924**

R. Gerard, P. Bouthillier, and J. Besmehn Field measurements of the hydraulic resistance of sanitary sewers **936**

Marc-André Bérubé, Benoit Fournier et Jean Frenette Détérioration de fondations de pylones d'ancrage de lignes de transport d'électricité par des réactions alcalis–granulats, performance mécanique et réparation du béton **945**

DISCUSSIONS

A. C. Heidebrecht and Chee Yuen Lu Evaluation of the seismic response factor introduced in the 1985 edition of the National Building Code of Canada

Discussion by R. H. Ferahian **960**

Author's reply **961**

BOOK REVIEWS/CRITIQUES DE LIVRES

Gurmukh S. Sarkaria Development of dam engineering in the United States. *Edited by* Eric B. Kollgaard and Wallace L. Chadwick **962**

Pierre Y. Julien Mechanics of plains rivers. *By* T. Blench **962**

Colin B. Brown Forensic engineering. *Edited by* Kenneth L. Camper **963**

J. G. Beliveau Vibration of structures: applications in civil engineering design. *By* J. W. Smith **964**

ERRATUM

T. J. Zhu, W. K. Tso, and A. C. Heidebrecht Erratum: Evaluation of base shear provisions in the 1985 edition of the National Building Code of Canada **966**